

ABSTRACT OF THE DISCLOSURE

A compact image element encoding format selectively allocates a bit field within the format to alternately encode either multi-bit alpha resolution or increased color resolution. This encoding technique may be advantageously used to allocate encoding bits to model semi-transparency while using those same bits for other purposes (e.g., higher color resolution) in instances where semi-transparency is not required (e.g., for opaque image elements). In one advantageous embodiment, the same encoding format can provide either RGB5 or RGB4A3, on an image-element-by-image-element basis. Applications include but are not limited to texture mapping in a 3D computer graphics system such as a home video game system or a personal computer.